

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 091 506 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
16.05.2001 Bulletin 2001/20

(51) Int. Cl.⁷: H04B 7/185

(43) Date of publication A2:
11.04.2001 Bulletin 2001/15

(21) Application number: 00810686.6

(22) Date of filing: 31.07.2000

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 01.10.1999 EP 99810890

(71) Applicant: Ascom Systec AG
5506 Mägenwil (CH)

(72) Inventor: Wildmer, Hanspeter
5507 Mellingen (CH)

(74) Representative:
Roshardt, Werner Alfred, Dipl.-Phys. et al
Keller & Partner
Patentanwälte AG
Schmiedlenplatz 5
Postfach
3000 Bern 7 (CH)

(54) **A hybrid CDMA and TDMA radio access scheme for personal satellite communication systems**

(57) To accomplish the object of high user capacity and high power efficiency, the invention is characterized in that the base station transmits control information in the forward link to each of the at least one user terminals for enabling the user terminal to transmit its signals in the return link in a mode to reach signal arrival at the base station that is quasi-synchronous with respect to the time and frequency reference in the base station.

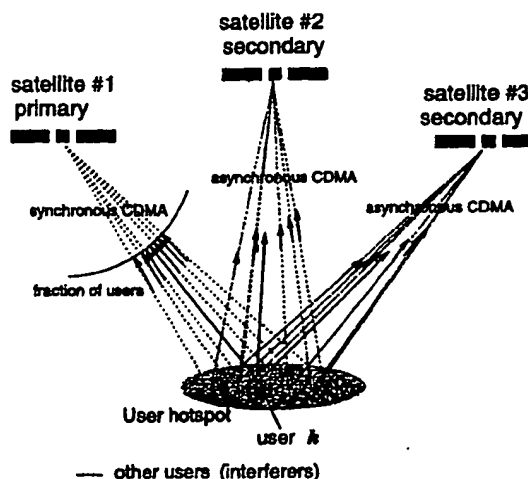


Fig. 1-1



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 81 0686

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
X	EP 0 845 874 A (TRW INC) 3 June 1998 (1998-06-03) * abstract; figures 1,3-5 * * column 2, line 54 - column 3, line 32 * * column 6, line 46 - column 7, line 8 * * column 7, line 17 - line 53 * * column 8, line 10 - column 12, line 6 * * column 19, line 21 - line 28 * ---	1,2,6-8, 22-25,33	H04B7/185
X	US 5 659 545 A (GREGG RALPH C ET AL) 19 August 1997 (1997-08-19) * abstract; figures 1,4-7 * * column 11, line 55 - line 60 * * column 12, line 46 - line 50 * * column 13, line 11 - line 16 * * column 14, line 9 - line 13 * * column 14, line 48 - line 67 * * column 2, line 62 - column 3, line 20 * * column 4, line 3 - line 9 * * column 4, line 31 - line 42 * ---	1,2,4-9, 22,23, 30,33	
A		11,16,24	
X	US 5 936 570 A (GHAZVINIAN FARZAD ET AL) 10 August 1999 (1999-08-10) * column 1, line 59 - column 2, line 4 * * column 16, line 1 - column 19, line 5; figures 2,22-25 * * column 16, line 59 - column 17, line 1 * * column 17, line 11 - line 39 * ---	1,8,22, 23,33	H04B
A		9,24,25	
Y	US 5 257 415 A (ENDO YOICHI ET AL) 26 October 1993 (1993-10-26) * abstract; figures 1,3,4 * * column 1, line 7 - column 1, line 27 * * column 4, line 15 - line 62 * ---	34	
-/--			
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 13 March 2001	Examiner Staeger, R
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 81 0686

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	US 4 644 565 A (SEO JONGSOO ET AL) 17 February 1987 (1987-02-17) * column 1, line 5 - line 32 * * column 2, line 59 - line 62 * ---	34	
Y	US 4 689 625 A (BARMAT MELVIN) 25 August 1987 (1987-08-25) * abstract; figures 1,4 * * column 1, line 6 - line 59 * * column 3, line 9 - line 25 * * column 6, line 42 - column 7, line 61 * ---	34	
Y	US 4 453 257 A (LO GERALD J P ET AL) 5 June 1984 (1984-06-05) * column 1, line 7 - column 2, line 22 * * column 3, line 46 - column 4, line 23 * * column 8, line 14 - line 22 * ---	34	
Y	US 4 462 001 A (GIRARD HENRI) 24 July 1984 (1984-07-24) * column 1, line 7 - line 32; figure 2 * ---	34	
Y	EP 0 306 918 A (NIPPON ELECTRIC CO) 15 March 1989 (1989-03-15) * abstract; figures 4,5 * * column 1, line 36 - line 52 * * column 5, line 1 - column 6, line 10 * -----	34	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Place of search MUNICH		Date of completion of the search 13 March 2001	Examiner Staeger, R
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date O : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 00 81 0686

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

13-03-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0845874 A	03-06-1998	US 5844521 A	01-12-1998
		CA 2222488 A	02-06-1998
		JP 2931574 B	09-08-1999
		JP 10229578 A	25-08-1998
US 5659545 A	19-08-1997	NONE	
US 5936570 A	10-08-1999	AU 3450199 A	20-09-1999
		EP 1060577 A	20-12-2000
		WO 9945659 A	10-09-1999
		US 6127967 A	03-10-2000
US 5257415 A	26-10-1993	JP 4291832 A	15-10-1992
		JP 4292024 A	16-10-1992
US 4644565 A	17-02-1987	CA 1265851 A	13-02-1990
US 4689625 A	25-08-1987	NONE	
US 4453257 A	05-06-1984	CA 1182875 A	19-02-1985
US 4462001 A	24-07-1984	CA 1184980 A	02-04-1985
EP 0306918 A	15-03-1989	JP 1071329 A	16-03-1989
		JP 1842421 C	12-05-1994
		JP 5053412 B	10-08-1993
		AU 604206 B	06-12-1990
		AU 2194488 A	16-03-1989
		CA 1291584 A	29-10-1991
		DE 3882464 A	26-08-1993
		US 4901310 A	13-02-1990